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EXAMINER
RASHID, DAVID

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/767,017	MIYAZAWA ET AL.
Office Action Summary	Examiner	Art Unit
	DAVID P. RASHID	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 April 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1,3,5,9,11,13 and 17</u> is/are allowed.

6)☒ Claim(s) <u>2,4,7,8,10,12,15 and 16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20090428

DETAILED ACTION

Table of Contents

Amendments & Claim Status

[1]   This office action is responsive to the <u>Amendment and Response to Office Action</u> received on Apr. 3, 2009. Claims 1-17 remain pending.

Response to Arguments

[2]   <u>Remarks</u> filed Apr. 4, 2009 with respect to claims 2, 4, 7, 10, 12, and 15 have been respectfully and fully considered, but are not found persuasive.

Unpersuasive Remarks regarding Rejections under 35. U.S.C. § 103(a)

> In particular, the cited references fail to disclose "a first electronic equipment of the other electronic equipments to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer" (emphasis added). The Examiner states that Qian discloses "storing information into .... other electronic equipments" at col. 3, 11. 31-34 (See Office Action mailed January 6, 2009, pg. 4), but this passage discloses "image data .... transmitted or stored .... in a channel, in a server, or over a network." Thus, while Qian discloses storing image data (including all layers) in a channel, server, etc., Qian does not disclose splitting this image data and storing one layer of the image in "a first electronic equipment" and another layer of the image in "a second electronic equipment." Rather, all layers of the image in Qian are stored together, e.g., in one server. Therefore, Skodras and Qian do not teach or suggest all the limitations of the claims.
>
> Given that the combination of the references fails to teach or suggest all of the limitations of claims 2, 4, 7, 10, 12, and 15, the Applicant respectfully submits that these claims are patentable over the cited references.

<u>Remarks</u> at 12-13.

However, the claims in question do not cite the quoted text but "wherein a first electronic equipment of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer" (emphasis added). A computer being "operable" to store a code is being "fit, possible, or desirable to use" the intended result of storing the code. A computer is certainly operable to store a first compressed code for the first hierarchical layer without a second compressed code for a second hierarchical layer, because a computer is composed of memory, processor, and all other parts needed to carry out the function if so desired.

Claim Rejections - 35 U.S.C. § 103

[3]   The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Skodras et al. in view of Qian et al.

[4]   **Claims 2, 4, 7, 10, 12,** and **15** are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Skodras et al.* in view of U.S. Patent No. 6,070,167 (issued May 30, 2000, *hereinafter* "Qian et al.").

Regarding **claim 2**, while *Skodras et al.* discloses an image processing apparatus ("computer" in left column, p. 38; fig. 2, p. 38) for hierarchically compressing ("Compressed Image Data" in fig. 2, p. 38) and coding ("Entropy Encoding" in fig. 2, p. 38) image data by subjecting pixel values of the image data ("Source Image Data" in fig. 2, p. 38) to a discrete wavelet transform ("Forward Transform" in fig. 2, p. 38; "[p]rior to computation of the forward discrete wavelet transform (DWT)...", left column, p. 40), quantization and coding for each of one or a plurality of rectangular regions into which the image data is divided ("The image components are (optionally) decomposed into rectangular tiles.", left column, p. 39; Image Tiling

Section, right column, p. 39), the image processing apparatus forming an electronic equipment (the computer to execute fig. 2, p. 38 forms electronic equipment) and comprising:

a hierarchical coding unit (unit responsible for producing the packet stream in fig. 11 in p. 45) to compress and code the image data in a state where the image data is divided for each hierarchical region (fig. 11, p. 45; "DWT on Each Tile" in fig. 3, p. 39 wherein the hierarchical regions are the tiles (level 0), precinct (level 1), and code blocks (level 2)), to obtain compressed codes ("Code Stream" in fig. 11, p. 45); and

a distributively storing unit ("Store and Transmit" in fig. 2, p. 38) to distributively store (fig. 11, p. 45 wherein each tile layer is a separate portion in the code stream) the compressed codes for each hierarchical layer separately by hierarchical layer (each hierarchical layer is stored in their respective physical locations of memory, each physical locations being physically separate from each other, *see* Claim 1 argument) into a physical storage unit (it is implicit if not already inherent that the image processing apparatus computer of *Skodras et al.* has a physical memory storage unit), *Skodras et al.* does not teach

(i) electronic equipment which is coupled to a network having other electronic equipments coupled thereto; and

(ii) distributively storing information into a storage unit of each of the other electronic equipments, wherein a first electronic equipment of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer.

Qian et al. discloses a hierarchical method and system for object-based audiovisual descriptive tagging of images for information retrieval, editing, and manipulation (fig. 1) that teaches

(i) electronic equipment ("computer" in 2:58-67; fig. 1, items 12, 14, 15, 16, 17, 20) which is coupled to a network (fig. 1, item 18) having other electronic equipments coupled thereto (a computer network is by definition composed of multiple computers being connected together using a telecommunication system for the purpose of sharing data, resources, and communication); and

(ii) distributively storing information into a storage unit of each of the other electronic equipments (3:31-34), wherein a first electronic equipment (one computer of the network, server) of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer (a computer is "operable" to do such)[1], wherein a second electronic equipment (another computer of the network, server) of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer (a computer is "operable" to do such).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the electronic equipment of *Skodras et al.* to include having other electronic equipments coupled thereto as taught by *Qian et al.* and the distributively storing unit of *Skodras et al.* to include storing the hierarchical layered compressed codes (wherein a first electronic equipment of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer) as taught by *Qian et al.* "…to develop a hierarchical data structure and method that enables association of descriptive data in an image.", *Qian et al.*, 1:59-61 and "to provide a system and method where the descriptive data may be specific to objects in the image and may include textual information, links to other files, other objects within the same image or other images, or links to web pages, and object features, such as shape, and audio annotation.", *Qian et al.*, 1:62-67.

Regarding **claim 4**, claim 2 recites identical features as in claim 4. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 4. The means-plus-function language is anticipated by the computer hardware ("computer" in left column, p. 38; fig. 2, p. 38) of *Skodras et al.*.

Regarding **claim 7**, while *Skodras et al.* teaches an image processing apparatus ("computer" in left column, p. 38; fig. 2, p. 38) for hierarchically compressing ("Compressed

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[1] Operable - fit, possible, or desirable to use, practicable (see Merriam-Webster Dictionary 2009, adj 1).

Image Data" in fig. 2, p. 38) and coding ("Entropy Encoding" in fig. 2, p. 38) image data by subjecting pixel values of the image data ("Source Image Data" in fig. 2, p. 38) to a discrete wavelet transform ("Forward Transform" in fig. 2, p. 38; "[p]rior to computation of the forward discrete wavelet transform (DWT)...", left column, p. 40), quantization and coding for each of one or a plurality of rectangular regions into which the image data is divided ("The image components are (optionally) decomposed into rectangular tiles.", left column, p. 39; Image Tiling Section, right column, p. 39), the image processing apparatus forming an electronic equipment (the computer to execute fig. 2, p. 38 forms electronic equipment) and comprising:

a rectangular region coding unit ("Tiling" in fig. 3, p. 39) to compress and code the image data in a state where the image data is divided for each rectangular region ("DWT on Each Tile" in fig. 3, p. 39; "All operations, including component mixing, wavelet transform, quantization and entropy coding are performed independently on the image tiles (Fig. 3).", right column, p. 39), to obtain compressed codes ("Code Stream" in fig. 11, p. 45); and

a distributively storing unit ("Store and Transmit" in fig. 2, p. 38) to distributively store (fig. 11, p. 45 wherein each tile layer is a separate portion in the code stream) the compressed codes for each rectangular region separately by rectangular region (each hierarchical layer is stored in their respective physical locations of memory, each physical location being physically separate from each other, *see* Claim 1 argument) into a storage unit (it is implicit if not already inherent that the image processing apparatus computer of *Skodras et al.* has a memory storage unit), *Skodras et al.* does not teach

(i) electronic equipment which is coupled to a network having other electronic equipments coupled thereto; and

(ii) distributively storing information into a storage unit of each of the other electronic equipments, wherein a first electronic equipment of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer.

Qian et al. discloses a hierarchical method and system for object-based audiovisual descriptive tagging of images for information retrieval, editing, and manipulation (fig. 1) that teaches

(i) electronic equipment ("computer" in 2:58-67; fig. 1, items 12, 14, 15, 16, 17, 20) which is coupled to a network (fig. 1, item 18) having other electronic equipments coupled thereto (a computer network is by definition composed of multiple computers being connected together using a telecommunication system for the purpose of sharing data, resources, and communication); and

(ii) distributively storing information into a storage unit of each of the other electronic equipments (3:31-34), wherein a first electronic equipment (one computer of the network, server) of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer (a computer is "operable" to do such)[2], wherein a second electronic equipment (another computer of the network, server) of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer (a computer is "operable" to do such).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the electronic equipment of *Skodras et al.* to include having other electronic equipments coupled thereto as taught by *Qian et al.* and the distributively storing unit of *Skodras et al.* to include storing the hierarchical layered compressed codes (wherein a first electronic equipment of the other electronic equipment is operable to store a first compressed code for a first hierarchical layer without a second compressed code for a second hierarchical layer, wherein a second electronic equipment of the other electronic equipments is operable to store the second compressed code for the second hierarchical layer without the first compressed code for the first hierarchical layer) as taught by *Qian et al.* "...to develop a hierarchical data structure and method that enables association of descriptive data in an image.", *Qian et al.*, 1:59-61 and "to provide a system and method where the descriptive data may be specific to objects in the image and may include textual information, links to other files, other objects within the same

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[2] Operable - fit, possible, or desirable to use, practicable (see Merriam-Webster Dictionary 2009, adj 1).

image or other images, or links to web pages, and object features, such as shape, and audio annotation.", *Qian et al.*, 1:62-67.

Regarding **claim 10**, claim 7 recites identical features as in claim 10. Thus, references/arguments equivalent to those presented above for claim 7 are equally applicable to claim 10. The means-plus-function language is anticipated by the computer hardware ("computer" in left column, p. 38; fig. 2, p. 38) of *Skodras et al.*.

Regarding **claim 12**, claim 2 recites identical features as in claim 12. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 12.

Regarding **claim 15**, claim 7 recites identical features as in claim 15. Thus, references/arguments equivalent to those presented above for claim 7 are equally applicable to claim 15.

Skodras et al. in view of Qian et al. and Beek et al.

[5]   **Claims 8** and **16** are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Skodras et al.* in view of *Qian et al.* and *Beek et al.*

Regarding **claim 8**, while *Skodras et al.* discloses the image processing apparatus as claimed in claim 5, though *Skodras et al.* hints at other forms of decomposition (besides tiles) citing "The image components are (optionally) decomposed into rectangular tiles. The tile-component is the basic unit of the original or reconstructed image.", left column, p. 39), *Skodras et al.* does not teach wherein the rectangular region coding unit compresses and codes the image data with a decomposition level dependent on a type of the image data, a type of region of the image data, a type of source electronic equipment of the image data, or an external instruction.

Beek et al. teaches metadata in JPEG 2000 file format that teaches "external instruction" with use of the functions SegmentDecomposition Decomposition, DecompositionDataType Datatype and DecompositionType Attribute (¶¶ 0036-0038).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for rectangular region coding unit as taught by *Skodras et al.* to compress and code the image data with a decomposition level dependent on external instruction as taught by *Beek et al.*

"...so that all complaint JPEG2000 viewers will be able to render the image in a proper manner and in addition process the additional information, if desired.", *Beek et al.*, ¶ 0016.

Regarding **claim 16**, claim 8 recites identical features as in claim 16. Thus, references/arguments equivalent to those presented above for claim 8 are equally applicable to claim 16.

Allowable Subject Matter

[6]   **Claims 1, 3, 5-6, 9, 11, 13-14,** and **17** allowed.

[7]   The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 1**, while the prior art of record teaches a first-level physical storing unit to store the compressed codes of the first hierarchical layer; and a second-level physical storing unit to separately store the compressed codes of the second hierarchical layer form the compressed codes of the first hierarchical layer, wherein the second-level physical storing unit is physically separate from the first-level physical storing unit,

the prior art of record does not teach a first-level storing unit to store the compressed codes of the first hierarchical layer, without the compressed codes of the second hierarchical layer, in a first computer; and a second-level storing unit to separately store the compressed codes of the second hierarchical layer, without the compressed codes of the first hierarchical layer, in a second computer. Claims 3, 5, 9, 11, 13, and 17 allowable by analogy. Claims 6 and 14 allowable by dependency.

Conclusion

[8]   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

[9]   Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578 and fax number (571)270-2578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

/Bhavesh M Mehta/   David P Rashid
Supervisory Patent Examiner, Art Unit 2624   Examiner
                                                     Art Unit 26244